

SUBSTITUTE COMPOSITION FOR HUMAN BODY HARD TISSUE

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Abstract

PURPOSE: To obtain a substitute composition for human body hard tissue which is excellent in affinity with a living body, form retainability after embedding, and a great strength after hardening, by preparing the substitute from a powder mainly composed of octa-calcium phosphate, and a liquid additive.

CONSTITUTION: Each 1mol. of calcium hydrogenphosphate and calcium carbonate is homogeneously mixed, and sintered at 1,400-1,600 deg.C, preferably at about 1,550 deg.C for about 1hr. The obtained sintered matter is pulverized into a powder of the particle diameter of at most 50µm to obtain the powder of a calcium phosphate mixture. As a liquid additive for imparting fluidity and plasticizing property to the powder composed of octa-calcium phosphate in 10-50wt.%, there can be mentioned an aqueous solution of at most 2N concentration of inorganic acids, such as, orthophosphoric acid, pyrophosphoric acid, hydrochloric acid, an aqueous solution of organic acids derived from a living body, such as, tartaric acid, malic acid, citric acid, and an aqueous solution of a polymer composed of a single monomer of unsaturated organic acids such as acrylic acid, maleic acid or a combination of one or more of copolymers thereof.

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